

**REMARKS**

Entry of the foregoing and reexamination and reconsideration of the subject application, as amended, pursuant to and consistent with 37 C.F.R. §1.112, are respectfully requested in light of the remarks which follow.

Claims 27, 30-32, 35-37, 40, 41, 52, 55, 56, 62-64 and 66-125 are now in this application. Claims 28, 29, 33, 34, 38, 39, 53 and 54 have been cancelled by the foregoing amendment, Claims 27, 30-32, 35-37, 40, 41, 62 and 63 have been amended and Claims 66-125 have been added.

The amendments to the existing claims are aimed at simplifying the claims (for example, by combining Claims 27-29 into a single claim) and making linguistic changes which do not raise new matter issues.

New Claims 66-81 specify amounts of cinnamic acid and are supported by page 6, lines 21-24 (lower limits of  $10^{-6}\%$  and  $10^{-3}\%$  and upper limits of 10% and 5%) and by the Composition Examples on pages 18-19 (0.01% amount).

Claim 82 contains language paralleling Claims 27 and 30, but is limited to cinnamic acid as (a). Claims 83 and 84 depend from Claim 82 but parallel Claims 66 and 67.

Claim 85 parallels Claim 62, but is limited to cinnamic acid itself. Claims 86 and 87 depend from Claim 85 but parallel Claims 66 and 67.

Claim 88 depends from Claim 62, but specifies (b) as  $\beta$ -naphthoxyacetic acid.  $\beta$ -Naphthoxyacetic acid is taught on page 7 of the specification as preferred as the other product which stimulates collagen or lipid synthesis. Claims 89-92 depend from Claim 88 but otherwise parallel Claims 66-69.

Claim 93 depends from Claim 85, but specifies  $\beta$ -naphthoxyacetic acid as (b).

Claims 94 and 95 depend from Claim 93, but otherwise parallel Claims 66 and 67.

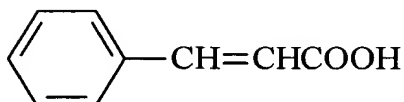
Claim 96 is drawn to a cosmetic composition wherein (a) consists of cinnamic acid and ethyl cinnamate, the latter being a specific derivative outside the scope of the derivatives specified in the earlier independent claim, but shown in Composition Example 4 on page 19 of the specification in combination with cinnamic acid. Claims 97-113 are also drawn to compositions in which (a) consists of this particular combination of ingredients. Of these, Claims 97-100, 102-106 and 108-112 specify additional features paralleling those already discussed above with respect to the earlier claims, while Claims 101, 107 and 113 specify the amounts of cinnamic acid and ethyl cinnamate set forth in Composition Example 4.

Claims 114-117 depend from Claims 27, 30, 31 and 62, respectively, but the composition of these claims further comprises an agent for modifying skin proliferation, based at least on page 13, lines 4-13, and page 14, line 27 to page 16, line 8. Claims 122-125 also have bases in these disclosures.

Claims 118-121 depend from Claims 27, 30, 31 and 62, respectively, but the composition of these claims further comprises an anti-wrinkle active agent, a feature which has basis at least on page 15, lines 19-24 of the specification. This feature is also specified in Claims 122-125.

In view of the foregoing, it is clear that the new claims do not introduce any new matter into the application.

All of the claims now in this application are drawn to compositions comprising cinnamic acid as ingredient (a). Cinnamic acid, also called 3-phenyl-2-propionic acid, has the structural formula

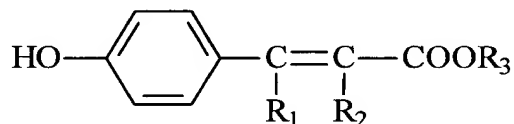


In the claimed compositions, (a) can be cinnamic acid itself; or (a) can be a mixture of cinnamic acid and at least one derivative thereof (for example, Claim 62); in many of the claims, the derivative(s) is/are selected from the group consisting of mono- and polyhydroxycinnamic acids and alcohols and aldehydes of cinnamic acid (for example, as in Claims 27, 30, and 31); or (a) can be a mixture of cinnamic acid and ethyl cinnamate (for example, Claim 96). In addition, some of the claims further specify the presence of at least one other product which stimulates collagen or lipid synthesis (for example, Claim 62), the presence of an agent for modifying skin proliferation (e.g., Claim 114) and/or the presence of an anti-wrinkle active agent (e.g., Claim 118). The composition claimed in every claim of the application must, however, always contain the compound cinnamic acid. The only situations in which the claims compositions comprise cinnamic acid derivatives are those in which the derivatives are in admixture with cinnamic acid itself. Cinnamic acid derivatives are never present in the claimed compositions in the absence of cinnamic acid itself. These are important characteristics of the claimed compositions to keep in mind when assessing the prior art.

We turn now to the rejections made in the Official Action.

Claims 27-31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over any one of Onuma et al (JP 05105620; hereafter '620) or Hotta et al (JP 62036305; hereafter '305) or Naeshiro et al (JP 04009317; hereafter '317) or Onuma et al (JP 05105643; hereafter '643, not '634 as indicated by the Examiner) in combination with Shirota et al (JP 06227959; hereafter '959). Applicants submit that all of their claims are free of this rejection.

'620 describes a cosmetic composition for whitening skin containing 0.01-50 wt%, preferably 0.1-20 wt% of a p-hydroxycinnamic acid derivative of the formula



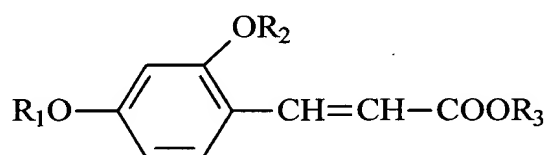
where  $\text{R}_1$  and  $\text{R}_2$  are hydrogen or lower alkyl, provided at least one of  $\text{R}_1$  and  $\text{R}_2$  is lower alkyl; and  $\text{R}_3$  is H or lower alkyl. Specific active ingredients named are p-hydroxy- and beta; -methylcinnamic acid ethyl ester. The active ingredient of the '620 patent thus cannot be cinnamic acid itself, of which there is no suggestion in '620. In contrast, every composition claimed in the present application must contain cinnamic acid. Optionally, the cinnamic acid herein may be in admixture with a cinnamic acid derivative, but the derivative cannot be present without cinnamic acid.

'305 describes a cosmetic composition with good skin whitening and sun-burn prevention comprising 0.1-20 wt% of 4-hydroxycinnamic acid as the effective component, together with a weakly basic inorganic or organic salt as a neutralizing agent.

4-Hydroxycinnamic acid is not cinnamic acid. The latter must be present in each and every composition claimed in the present application. The cinnamic acid herein may be in admixture with a cinnamic acid derivative, but the derivative cannot be present without cinnamic acid. Cinnamic acid itself is not contemplated by '305.

'317 describes a skin whitening cosmetic comprising 0.1-20 wt% of the cultured product of *Ganoderma mycelia* and/or an extract thereof, 0.1-10 wt% of at least one of tranexamic acid and its derivatives, photosensitizers and 4-hydroxycinnamic acid. As noted above, 4-hydroxycinnamic acid is not cinnamic acid itself, which is unsuggested by the reference. Cinnamic acid itself is required in all of the instantly claimed compositions. A cinnamic acid derivative may be present in applicants' compositions in addition to, but not instead of, cinnamic acid itself.

'643 describes skin lightening compositions containing a cinnamic acid derivative of the formula



where  $\text{R}_1$  is H or acyl;  $\text{R}_2$  is lower alkyl; and  $\text{R}_3$  is H or lower alkyl. The cinnamic acid derivative is preferably 4-hydroxy-2'-methoxycinnamic acid or 4-acetoxy-2-methoxycinnamic acid or their esters, especially 4-acetoxy-2-methoxycinnamic acid ethyl ester, in an amount of 0.01-50 wt%, especially 0.1-20 wt%. These derivatives thus differ in several (two or three) structural respects from cinnamic acid itself. Cinnamic acid itself is unsuggested by '643. Cinnamic acid itself is required in all of the instantly

claimed compositions. Cinnamic acid derivatives can only be present in applicants' compositions in combination with cinnamic acid.

'959 describes cosmetic compositions for whitening skin comprising a phenol such as curcumin, 4-hydroxy-3-methoxycinnamaldehyde, capsaicin, 3-methoxy-L-tyrosine or eugenol. The amount of phenol appears to be from 0.0001 to 10%, but the only example of the cinnamic acid derivative uses 0.1% by weight.

4-Hydroxy-3-methoxycinnamaldehyde differs in several structural respects from cinnamic acid itself. Cinnamic acid itself is unsuggested by '959. Cinnamic acid itself is required in all of the instantly claimed compositions. Cinnamic acid derivatives are only present herein in admixture with cinnamic acid itself.

It is clear from the foregoing that not one of the '620, '305, '317, '643 and '959 references discloses a skin whitening/lightening composition comprising cinnamic acid *per se*, alone or in combination with a cinnamic acid derivative. Whether or not the amount of the cinnamic acid derivatives in the art is the same as or different from the amount of those derivatives which may be present in applicants' compositions need not be addressed, because the references do not suggest cinnamic acid itself in their compositions, much less an amount thereof. It is however pointed out that many of the instant claims specify amounts of cinnamic acid much smaller than the amounts of cinnamic acid derivatives indicated in the references.

And applicants' claims all require an amount of cinnamic acid itself which is effective to firm, smooth or tighten skin, which is effective to alleviate the effects of menopause on the skin, or which is effective to alleviate the effects of menopause on

collagen. This is in no way suggested by the art relied upon by the Examiner. Withdrawal of the record 35 U.S.C. § 103(a) rejection based on '620 or '305 or '317 or '643 together with '959 is believed to be in order and is earnestly solicited.

Claims 32-41, 52-56 and 62-64 have been rejected as unpatentable over any one of '620, '305, '317 and '643 in combination with '959 and further in combination with either Szijjarto nee Auber et al U.S. Patent No. 4,466,961 ('961) or McAuslan WO88/01166 ('166). It is submitted that all of the claims now in this application are free of this rejection.

The '620, '305, '317, '643 and '959 documents have been fully discussed above, where it is noted that applicants' composition claims as set forth above all distinguish from these documents, which neither describes nor suggests the limitations of any of applicants' claims, as none of them suggests cinnamic acid itself. Thus, applicants' active ingredient (a) as claimed in each and every claim is not disclosed or suggested by these documents which always require cinnamic acid and only allow the presence of a derivative thereof when cinnamic acid itself is also present.

In view of the deficiencies of the '620, '305, '317, '643 and '959 references, it is clear that the instant claims which further require the presence of applicants' ingredient (b), which is another compound which stimulates lipid or collagen synthesis, cannot be obvious from combination of those references with the '961 patent or the '166 publication.

The '961 patent concerns a pharmaceutical composition suitable for treating injuries, containing numerous essential ingredients which include a tannic compound, a

carbohydrate, an anthocyan and/or flavonone type compound and/or pectin, plant wax and volatile oils in alcohol. Optionally, a plant hormone can be added to the '961 composition.

Applicants' ingredient (a) as claimed in each and every claim must include cinnamic acid *per se* and thus is neither described nor suggested by any of the '620, '305, '317, '643 and '959 references, or the '961 patent, so combining any of them with the '961 patent, which neither describes nor suggests applicants' ingredient (a), would never arrive at applicants' composition. Still further, there is no suggestion or motivation in the '620, '305, '317, '643 and '959 references to search for a compound which stimulates lipid or collagen synthesis. The primary references focus on lightening or whitening skin, an entirely different object than that of applicants. Applicants are concerned with a new technical effect which they have discovered, that is, that cinnamic acid and derivatives thereof stimulate the synthesis of collagen. This effect was not known prior to applicants' invention and has nothing to do with lightening or whitening skin. Further, there is no teaching in the '961 patent which would lead one of ordinary skill to add plant hormones to the skin whitening/lightening compositions of the primary references to provide nutrients to the skin, as suggested by the Examiner. Moreover, the plant hormone is used herein to reinforce the effect of cinnamic acid on stimulating collagen synthesis, which was neither described nor suggested at the time of applicants' invention. Clearly, none of applicants' claims can be considered obvious from the primary references in view of the '961 patent.

The '166 publication describes a method of stimulating angiogenesis or promoting endothelialization by administering an anti-inflammatory compound. The cited publication is unrelated to the '620/'305/'317/'643/'959 invention of lightening skin, so it is not seen



why one of ordinary skill would even consult such a document. At any rate, as with the '961 patent, combining the '166 publication with the primary references would never arrive at applicants' invention because applicants' ingredient (a) as set forth in each and every claim is neither described nor suggested by any of the other cited art. None of the cited art suggests cinnamic acid *per se*, the presence of which is required in each and every claim herein.

In view of the foregoing, it is submitted that all of the applicants' claims stand free of all 35 U.S.C. § 103 rejections of record. Withdrawal of these rejections are believed to be in order and are earnestly solicited.

In regard to the provisional obviousness-type double patenting rejection based on copending Application No. 09/887,073, it is pointed out that no overlapping claims have yet been allowed in either application. The two applications have the same effective filing date. It is respectfully requested that the Examiner withdraw the double patenting rejection herein and allow this application. Then, unless the claims in the other application are amended to avoid a double patenting rejection therein, applicants can file an appropriate terminal disclaimer therein. In the event that copending Application No. 09/887,073 is first allowed, and the claims overlap, applicants will file an appropriate disclaimer herein.

Finally, it has been noted that applicants' Form PTO-1449 filed with the June 25, 2001 Information Disclosure Statement has not been acknowledged by the Examiner. It is respectfully requested that the Examiner initial the enclosed duplicate copy of the Form PTO-1449 and return a copy of same to the undersigned with the next official communication.

In light of the above, all of the claims as proposed to be amended are believed to be free of all record rejections. Entry of the amendment and issuance of a Notice of Allowance are believed to be next in order and are earnestly solicited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Mary Katherine Baumeister  
Mary Katherine Baumeister  
Registration No. 26,254

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

Date: April 15, 2003

**Attachment to Reply and Amendment dated April 15, 2003**

**Marked-up Claims 27, 30-32, 35-37, 40, 41, 62 and 63**

27. (three times amended) A cosmetic composition suitable for firming, smoothing or tightening of the skin which comprises [an amount of] (a) cinnamic acid, or a mixture of cinnamic acid and at least one derivative thereof selected from the group consisting of mono- and polyhydroxycinnamic acids, [or] and alcohols and aldehydes of cinnamic acid, wherein cinnamic acid is present in an amount effective to provide for firming, smoothing or tightening of the skin, and [further comprising] (b) a cosmetically acceptable carrier [therefor].

30. (three times amended) A cosmetic composition suitable for alleviating the effects of menopause on the skin comprising [an amount of] (a) cinnamic acid, or a mixture of cinnamic acid and at least one derivative thereof selected from the group consisting of mono- and polyhydroxycinnamic acids, [or] and alcohols and aldehydes of cinnamic acid, wherein cinnamic acid is present in an amount effective to alleviate the effects of menopause on the skin, and [further comprising] (b) a cosmetically acceptable carrier [therefor].

31. (three times amended) A cosmetic composition suitable for alleviating the effects of menopause on collagen comprising [an effective amount of] (a) cinnamic acid, or a mixture of cinnamic acid and at least one derivative thereof selected from the group consisting of mono- and polyhydroxycinnamic acids, [or] and alcohols and aldehydes of

**Attachment to Reply and Amendment dated April 15, 2003**

**Marked-up Claims 27, 30-32, 35-37, 40, 41, 62 and 63**

cinnamic acid, wherein cinnamic acid is present in an amount effective to alleviate the effects of menopause on collagen, and [further comprising] (b) a cosmetically acceptable carrier [therefor].

32. (twice amended) The cosmetic composition of Claim 27, which further comprises at least one other product which stimulates collagen or lipid synthesis [and/or at least one other product which stimulates lipid synthesis].

35. (twice amended) The cosmetic composition of Claim [28] 30, which further comprises at least one other product which stimulates collagen or lipid synthesis [and/or at least one other product which stimulates lipid synthesis].

36. (twice amended) The cosmetic composition of Claim 31, which comprises at least one other product which stimulates collagen or lipid synthesis [and/or at least one other product which stimulates lipid synthesis].

37. (twice amended) The cosmetic composition of Claim 32, wherein said other product [which stimulates collagen synthesis] is selected from the group consisting of plant hormones, vitamin C [or] and derivatives thereof [and/or said other product which stimulates lipid synthesis is a plant hormone].

**Attachment to Reply and Amendment dated April 15, 2003**

**Marked-up Claims 27, 30-32, 35-37, 40, 41, 62 and 63**

40. (twice amended) The cosmetic composition of Claim 35, wherein said other product [which stimulates collagen synthesis] is selected from the group consisting of plant hormones, vitamin C [or] and derivatives thereof [and/or said other product which stimulates lipid synthesis is a plant hormone].

41. (twice amended) The cosmetic composition of Claim 36, wherein said other product [which stimulates collagen synthesis] is selected from the group consisting of plant hormones, vitamin C [or] and derivatives thereof [and/or said other product which stimulates lipid synthesis is a plant hormone].

62. (twice amended) A cosmetic composition suitable for firming of the skin, smoothing of the skin, tightening of the skin, and/or alleviating the effects of menopause on the skin which comprises [an amount of] (a) cinnamic acid or a mixture of cinnamic acid and at least one derivative thereof, wherein cinnamic acid is present in an amount effective to provide for firming of the skin, smoothing of the skin, tightening of the skin, and/or alleviating the effects of menopause on the skin, respectively, [a cosmetically acceptable carrier thereof and] (b) at least one other product which stimulates collagen or lipid synthesis [and/or at least one other product which stimulates lipid synthesis] and (c) a cosmetically acceptable carrier.

**Attachment to Reply and Amendment dated April 15, 2003**

**Marked-up Claims 27, 30-32, 35-37, 40, 41, 62 and 63**

63. (amended) The cosmetic composition of Claim 62, wherein said other product [which stimulates collagen synthesis] is selected from the group consisting of plant hormones, vitamin C [or] and derivatives thereof [and/or said other product which stimulates lipid synthesis is a plant hormone].